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Poster Presentations

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Association of *MMP2* polymorphism with premature reduction of ovarian reserve

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Background: Premature ovarian insufficiency (POI) is one of the infertility factors, which affects about 1-3% of women under 40 years of age. There is an increasing list of genetic causes, but POI is mostly idiopathic. Several Studies show that Matrix Metallopeptidase 2 *(MMP2)* gene polymorphisms are effective in reducing ovarian reserve earlier than scheduled.
Objective: This study aim to investigate the association of *MMP2* gene polymorphism (rs243865) with POI in Iranian women undergoing IVF treatment referred to Yazd Infertility Center.
Materials and Methods: One hundred women under the age of 35 with anti-mullerian hormone under 1.7 ng/ml referred to the recurrent abortion clinic in Yazd Reproductive Sciences Institute, and 100 women with normal ovarian reserve with the same age entered as cases and controls in this study. After obtaining the consent to participate in this study, blood samples were taken in an EDTA tube and genomic DNA was extracted by DNA Extraction Kit (JAPA). Genetic variability of *MMP2* was tested using the tetra ARMS-PCR method. A few cases and controls were sequenced for confirmation of the desired SNP.
Results: Genotypes frequency of TT, TC and CC for *MMP2* polymorphism among women with premature ovarian insufficiency was 4%, 36%, and 60%, while in the control group these values were 2%, 58%, and 40% respectively. The diffrences of the frequency of these genotypes between cases and controls were significant. The frequency of the T and C alleles was 8% and 92% in the case and 12% and 88% in control groups respectively, which the differences between them were significant.
Conclusion: According to the results, *MMP2* rs243865 polymorphism may increase the susceptibility to premature reduction of female ovarian reserve.
Key words: *Premature ovarian insufficiency, Matrix metalloproteinase 2, Low anti-mullerian hormone.*